

## **REMARKS**

### **Status of the Claims**

Claims 1-7 and 9-18 are pending in the above-identified application. Claims 1-7 are currently withdrawn from consideration. Claims 9-18 stand ready for further action on the merits. Claims 9-10 and 18 have been amended. Support for the recitations in claims 9-10 and 18 can be found in the present specification, *inter alia*, at page 6, lines 13-15. Thus, no new matter has been added. Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

### **Issues over the Cited References**

1) Claim 18 is rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Inoue et al. '874 (US 5,019,874) in view of Mochizuki et al. '711 (US 6,696,711).

2) Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mochizuki et al. '711 in view of Inoue et al. '874.

3) Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mochizuki et al. '711 and Inoue et al. '874 in view of Ohkubo et al. '860 (US 5,492,860).

4) Claims 10-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mochizuki et al. '711 in view of Ohkubo et al. '860.

5) Claims 10-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Inoue et al. '874 and Mochizuki et al. '711 in view of Ohkubo et al. '860.

Applicants respectfully traverse. Reconsideration and withdrawal of the outstanding rejections are respectfully requested based on the following considerations.

Legal Standard for Determining Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Legal Standard for Determining Prima Facie Obviousness

MPEP 2141 sets forth the guidelines in determining obviousness. First, the Examiner has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

*Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the Examiner has to provide some rationale for determining obviousness. MPEP 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Exemplary rationales that may support a conclusion of obviousness include:

- (a) combining prior art elements according to known methods to yield predictable results;
- (b) simple substitution of one known element for another to obtain predictable results;
- (c) use of known technique to improve similar devices (methods, or products) in the same way;
- (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (e) “obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success
- (f) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
- (g) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

As the MPEP directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See MPEP 2143.03.

*Distinctions over the Cited References*

Inoue et al. '874 do not disclose a GaAs substrate. The Examiner relies on Figure 5 of Inoue et al. '874, which has a silicon substrate 21 (col. 6, lines 3-4). Should the Examiner continue to construe the GaAs layer of Inoue et al. '874 as a substrate, Inoue et al. '874 also do not disclose that an InGaP buffer layer or an InGaAsP buffer layer is directly grown on a GaAs substrate. Finally, Inoue et al. '874 fail to disclose "a uniform In content" as recited in the independent claims.

Mochizuki et al. '711 suffer from similar deficiencies. As the Examiner admits, Mochizuki et al. '711 fail to disclose that "the thickness of the InGaP buffer layer or the InGaAsP buffer layer is not less than 5 nm and not greater than 300 nm." Furthermore, Mochizuki et al. '711 also do not disclose "a uniform In content" as recited in the independent claims. In contrast, as to the In content of the InGaP buffer layer, Mochizuki et al. '711 disclose "the InP mole fraction gradually increasing from 0.5 to 1.0" (col. 7, lines 27-28). However, Mochizuki et al. '711 provide no description concerning a uniform In content.

Ohkubo et al. '860 fail to overcome the deficiencies of these two references.

Accordingly, the present invention is not anticipated by Inoue et al. '874 since the reference does not teach or provide for each of the limitations recited in the pending claims.

Moreover, a *prima facie* case of obviousness has not been established. To establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be disclosed by the cited references. As discussed above, the cited references fail to disclose all of the claim limitations of the pending claims. Accordingly, the reference does not render the present invention obvious.

Furthermore, the cited reference or the knowledge in the art provides no reason or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed. Therefore, withdrawal of the outstanding rejections is respectfully requested. Any contentions of the USPTO to the contrary must be reconsidered at present.

### **Conclusion**

Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of the pending claims 9-18 is allowable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad M. Rink, Reg. No. 58,258, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

By

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